More than Structure

Design-Led Solutions in Solid Timber
Studio in Bristol, Wisconsin (1970)
“The building is constructed almost entirely of two by four planks... a continuous inter-locked construction of immense strength, cyclone and earth-quake proof.”

“Being solid wood throughout, the building is, in effect, mill-construction and therefore fire-resistant. The four inch depth of wood is its own insulation, so the building is intrinsically warm in winter and cool in Summer.”

Werner Blaser – Architecture and Nature: The Work of Alfred Caldwell
Structural Stability

7-Storey Test Building, Miki, Japan, 2007

IMAGE © PROGETTOSOFIE
“This building was subjected to two of the most severe recent Japanese earthquakes and survived without significant damage or residual displacements and then, was shipped back to be re-used as a student residence in Italy”
Structural Stability
7-Storey Test Building, Miki, Japan, 2007
Dimensional Stability

Unaffected by Moisture (Glulam, Crosslam)
Dimensional Stability

Unaffected by Temperature
Dimensional Stability

No movement Joints
### Thermal Stability

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>THERMAL MASS</th>
<th>STABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>c.ρ (kJ/m²K)</td>
<td>λ / c.ρ (cm²/s)</td>
</tr>
<tr>
<td>Water</td>
<td>4,190</td>
<td>14</td>
</tr>
<tr>
<td>Concrete</td>
<td>2,640</td>
<td>68</td>
</tr>
<tr>
<td>Solid Timber</td>
<td>1,008</td>
<td>12</td>
</tr>
<tr>
<td>Brickwork</td>
<td>990</td>
<td>44</td>
</tr>
<tr>
<td>SIP Panel (EPS)</td>
<td>24</td>
<td>167</td>
</tr>
<tr>
<td>Air</td>
<td>1</td>
<td>2,500</td>
</tr>
</tbody>
</table>
Moisture Stability

Humidity comfort range
Relative humidity and ideal room temperature are essential for interior comfort.
Physiological Stability

Daily Heart Rate

“600 heartbeats less per day”
Physiological Stability
Reduced Stress Levels

Medical evidence that timber as a construction material has a positive influence on human health.

Clinical proof that schools made from timber enable a stress-free environment for learning and working.

Evidence to support the argument that solid timber construction should be the favoured construction method for school buildings.
Climate Stability

Storage of Carbon & Substitution Effect
Eurban is a consultancy and construction company specializing in the design, procurement and delivery of solid timber building structures.
Eurban Limited

What We Do
Eurban Limited
Integrated Service Provider
0859  Dune House, Suffolk
0859 Dune House, Suffolk
1090  Bridport House, London N1
1797 Cobalt Place, London SW11
Thermal Performance

“The four inch depth of wood is its own insulation, so the building is intrinsically warm in winter and cool in Summer.”
0056  Sunken House, London N1
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DACHAUFBAU
1  Metalldeckung
2  Strukturierte Trennlage

Vorfabriziertes Dach-Element:
3  Diffusionsoffene Unterdeckbahn
4  LVL (Kerto) Platte
5  BSH 80 / 200 - BS11
6  WF Daemmung
7  MDH LenoTec Platte (Luftdicht wegen SOF)
8  LVL Stossdeckleiste
9  Klebeband (konvektionsdicht)

Baustellenarbeit:
LVL; Klebeband; Daemmung; LVL (alles im stossbereich)
0056  Sunken House, London N1
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0056  Sunken House, London N1
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0056  Sunken House, London N1

CLIENT
Private

ARCHITECT
David Adjaye Associates

CONCRETE ENGINEER
Techniker

TIMBER ENGINEER
Eurban

MAIN CONTRACTOR
None (Construction Management)

FLOOR AREA
150 m²

INSTALLATION PERIOD
1 week

MATERIALS USED
Crosslam / LVL / Cassettes

COMPONENT THICKNESSES
160mm (Walls); 300mm (Roof)

STORED CARBON
58 t CO₂e
1679 Architecture Archive, Somerset
1679 Architecture Archive, Somerset
1679 Architecture Archive, Somerset
1679 Architecture Archive, Somerset
1679 Architecture Archive, Somerset
1679 Architecture Archive, Somerset
1679  Architecture Archive, Somerset
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<table>
<thead>
<tr>
<th>CLIENT</th>
<th>FLOOR AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>210 m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARCHITECT</th>
<th>INSTALLATION PERIOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hugh Strange Architects</td>
<td>2 weeks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONCRETE ENGINEER</th>
<th>MATERIALS USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price &amp; Myers</td>
<td>Crosslam / Glulam</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIMBER ENGINEER</th>
<th>COMPONENT THICKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eurban</td>
<td>300mm (Walls); 420mm (Roof)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>MAIN CONTRACTOR</th>
<th>STORED CARBON</th>
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<tbody>
<tr>
<td>None (Construction Management)</td>
<td>t CO2e</td>
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</table>
Acoustic Performance
0778 Waingels College, Berkshire
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0778 Waingels College, Berkshire
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0778 Waingels College, Berkshire

CLIENT
Wokingham Borough Council

ARCHITECT
Sheppard Robson

CIVIL ENGINEER
Ramboll

TIMBER ENGINEER
Eurban

MAIN CONTRACTOR
Willmott Dixon

FLOOR AREA
12,925 m²

INSTALLATION PERIOD
36 weeks

MATERIALS USED
Crosslam / Glulam / Lignatur

STORED CARBON
2,285 t CO₂e

ENVIRONMENTAL RATING
BREEAM Excellent
1758  Arcadia Nursery, Edinburgh
Designed around the concept of ‘free play’

Children choose what activities they would like to participate in instead of being allocated to a playroom for the day.

“A place to learn, play and imagine”
1758 Arcadia Nursery, Edinburgh
1758 Arcadia Nursery, Edinburgh

‘Serenity’ Floorplan (3-5s)
1758 Arcadia Nursery, Edinburgh

‘Peace’ Floorplan (2-3s)
1758 Arcadia Nursery, Edinburgh

‘Harmony’ Floorplan (0-2s)
1758  Arcadia Nursery, Edinburgh
1758 Arcadia Nursery, Edinburgh
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### 1758 Arcadia Nursery, Edinburgh

<table>
<thead>
<tr>
<th>CLIENT</th>
<th>UNIVERSITY OF EDINBURGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHITECT</td>
<td>Malcolm Fraser Architects</td>
</tr>
<tr>
<td>PROJECT ENGINEER</td>
<td>AED</td>
</tr>
<tr>
<td>TIMBER ENGINEER</td>
<td>Eururban</td>
</tr>
<tr>
<td>MAIN CONTRACTOR</td>
<td>Balfour Beatty</td>
</tr>
<tr>
<td>FLOOR AREA</td>
<td>Up to 113 children</td>
</tr>
<tr>
<td>INSTALLATION PERIOD</td>
<td>6 weeks</td>
</tr>
<tr>
<td>MATERIALS USED</td>
<td>Crosslam / Glulam / Lignatur</td>
</tr>
<tr>
<td>STORED CARBON</td>
<td>t CO2e</td>
</tr>
<tr>
<td>ENVIRONMENTAL RATING</td>
<td>BREEAM Excellent</td>
</tr>
</tbody>
</table>
“The work we did is beautiful and important. However we have been unable to make it profitable.”